

KELLY-SPRINGFIELD TIRE PLANT,
COOLING TOWER
701 Kelly Road
Cumberland
Allegany County
Maryland

HAER No. MD-102-D

HAER
MD,
1-CUMB,
4D.

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD
National Park Service
Northeast Region
Philadelphia Support Office
U.S. Custom House
200 Chestnut Street
Philadelphia, P.A. 19106

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Location: 701 Kelly Road
Cumberland
Allegany County, Maryland

USGS Cumberland, Maryland Quadrangle
Universal Transverse Mercator Coordinates:
17.690480.4390260

Date of Construction: Circa 1945

Engineer: Not available
Architect: Not available

Present Owner: Allegany County Commissioners
County Office Complex
701 Kelly Road
Cumberland, Maryland 21502

Present Use: Vacant

Significance: The Kelly-Springfield Tire Plant is a technologically and historically significant industrial complex in Allegany County. The facility was in operation from 1921 until 1987 and served as Kelly-Springfield's only manufacturing plant between 1925 and 1962. The plant was critical to the development of Cumberland during the twentieth century, and is an important record of an early tire manufacturing plant.

The Cooling Tower, built circa 1945, represents a later addition to the plant. The structure was built to cool the hot water created during the tire making process. Hot water from the plant was delivered to the tower, cooled, and stored in an underground reservoir before being recirculated back to the plant.

Project Information: Plans for the redevelopment of Kelly-Springfield Tire Plant as the Riverside Industrial Park includes demolition of the cooling tower. Documentation of the structure to the standards of the Historic American Engineering Record prior to demolition was prescribed as part of a Memorandum of Agreement negotiated among the Economic Development Administration (EDA), the Allegany County Board of Commissioners, and the Maryland Historical Trust to mitigate removal of the structures. This documentation was undertaken in May and June 1995 in partial fulfillment of that agreement.

R. Christopher Goodwin & Associates, Inc.
337 East Third Street
Frederick, Maryland 21701

Institute for the History of Technology and Industrial Archeology
West Virginia University
1535 Mileground - Bicentennial House
Morgantown, West Virginia 26506

Cooling Tower (Building 71)

Architectural Description

The cooling tower is a wood-frame structure comprising three attached cooling cells. Each of the three cooling cells has an octagonal plan, measuring approximately 31 by 31 feet, and rises to a height of 37 feet. The tower, constructed entirely of redwood, rests on an enclosed, underground concrete holding reservoir. The cooling tower was built to cool hot water created during the tire making process.

A wood railing surrounds the top of the tower. A concrete catch basin is located at the base of the tower over the reservoir. The catch basin is surrounded by a two-foot concrete wall and is provided with nine drains along the west elevation. The drains, protected by metal screens, conduct water to the reservoir below. The cooling tower consists of a structural wood frame, comprised of vertical, diagonal, and horizontal support members. The interior of the structure is comprised of a succession of evenly spaced lightweight wooden (redwood) slats, nailed in groups of nine, to form grill work. The slats are cut on 30 degree angles to conduct the water downward. The slatted grills are supported by horizontal cross members that are spaced every two feet. These cross members are supported by vertical members that extend the entire height of the tower.

Pipes running up the side of the towers delivered hot water from the plant to the tops of the towers, where a sprayer nozzle diffused the water into the tower. The water was then conducted by gravity over multiple layers of wood slats within the tower, which provided surfaces for the water to run off. Fans located on the roof of each cooling cell drew air upward through the bottom of the tower, thus cooling the water as it ran down the slats. The cooled water was collected in a concrete catch basin below the tower and conducted to the underground reservoir. From the reservoir, the water was pumped to the plant for reuse. The redwood construction was an important feature of the structure because redwood does not deteriorate if it is kept continuously wet.

A wood cylinder projects five feet from the top of each cooling cell and houses a large, electric, five-blade fan. The fans conducted air upward through each vertical cell. The lower exterior walls of the tower featureouvered panels which conduct air inward; the exterior walls of the upper portion of the cooling tower are sheathed in closely spaced horizontal wood slats. A vertical pipe is located on the west elevation of each cell. These pipes running up the side of the towers delivered hot water from the plant to the tops of the towers. A wooden stair tower ascends the south elevation of the tower.

Historical Evolution

Due to the heat generated during the different processes of tire manufacturing, a method of cooling the rubber was necessary. The stages in the tire manufacturing process that required water for cooling were the tread, sidewall, and inner tube production. These components of a tire were produced by extruding rubber through a machine. Rubber was heated in the extruding process and cooled once the component was formed. The most effective means of cooling rubber was to spray or immerse the component in cool water. This process, however, required a continuous supply of cooled water.

Early Tire Manufacturing in Cumberland (1921-1942). Originally, the Kelly-Springfield Tire Plant was constructed without a cooling tower. The plant's water-cooling facility consisted of a 375,000-gallon

underground reservoir measuring 52'-8" in width, 102'-8" in length, and 12 feet in height.¹ Water was delivered from the reservoir to the plant via underground pipes. After the water was used, it was returned to the reservoir. This cooling method was designed as a closed-loop system. Water was cycled continuously.

Ammunition Manufacturing (1943-1945). Archival evidence suggests that the reservoir was inactive during the war years. A map of the Allegany Ordnance Plant, dated 1943, does not list a building use for the reservoir.

Return to Tire Manufacturing at the Cumberland Plant (1943-1987). The existing cooling tower was built circa 1945.² The structure was designed to cool the hot water more effectively before the water was recirculated back to the plant. The cooling tower accelerated the cooling process and allowed the extruded components to advance more quickly to the next stage in the manufacturing process. Archival research did not uncover drawings or specifications for the cooling tower.

¹ Well Water Reservoir plan, May 1926.

² Sanborn Map Company, *Insurance Maps of Cumberland, Allegany County, Maryland* (Philadelphia: Sanborn Map and Publishing Company, 1945). Historic maps and photographs reveal that the cooling tower was not built until circa 1945.

SOURCES OF INFORMATION/BIBLIOGRAPHY

A. Engineering Drawings:

Drawings in the collection of the Allegany County Commissioners, Cumberland, Maryland:

1926, May. Well Water Reservoir. One sheet.

B. Historic Views (All historic views courtesy of Kelly-Springfield Tire Co., Corporate Headquarters, Cumberland, Maryland):

View northeast of Kelly-Springfield Tire Plant. Ca. 1935.

C. Interviews:

Peterson, Howard H. Interview by Eliza H. Edwards and Patrick Giglio. Tape recording, 12 May 1995.
Allegany County Commissioners, Cumberland, Maryland.